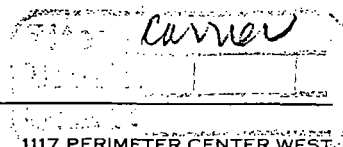


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US EPA Region IV
Carrier Air Conditioning Site

BVWST Project 45256.001
July 25, 1991

Ms. Beth Brown
US EPA Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Subject: Review Comments

Dear Ms. Brown:

We have completed our review of the PRP revised Remedial Investigation Report for the Carrier Air Conditioning site in Collierville, Tennessee. For the most part, this report adequately addresses our comments on the draft RI report which were submitted to you previously. Upon the completion of our review, we believe that some clarification is required. This letter report presents our comments and is responsive to Task 3 as identified in the Work Plan for this Work Assignment (C04029). The comments are categorized as either general or specific.

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General

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- ✓1. It appears that much of the report was written without including all of the Phase III data. More detail could have been provided about the extent of the Jackson Clay and the shallow aquifer by incorporating data from the Phase III borings. The likelihood that shallow water may flow to the north should be addressed.
- ✓2. Analytical data from wells MW-59, 58, and 61 have not been included. This information should be provided as it becomes available. Data from these wells will support the conclusion that the limit of ground water contamination has been defined.
- ✓3. Based on analytical data from MW-57, it appears that the limit of shallow groundwater contamination has not been defined to the north of the city wells. This should be addressed in the report.
4. Because several Phase III wells were reported as being dry or recharged so slowly that groundwater samples could not be obtained, it is assumed that the limit of shallow groundwater contamination



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is defined. We recommend that these wells continue to be mentioned quarterly and sampled, if sufficient recharge allows.

- ✓ 5. The PRP has compiled with the request that both filtered and ^g unfiltered metals analyses be conducted; however, there is no interpretation presented nor discussion of the significance of the data.
- ✓ 6. Various additional parameters were analyzed during Phase III including DO, BOD, etc. with respect to evaluating degradation of TCE. In addition, we anticipated that a geochemical model was going to be prepared. Was this information purposely omitted from the RI report because it will be addressed in the FS?
7. Appendix H does not include EPA "check" samples 02219107, 02219107A, nor 02219107B.
8. Available February 1991 groundwater data and Phase III (March, April, May 1991) groundwater and soil data were compared with the available corresponding laboratory data packages.

The following February 1991 groundwater samples (Appendix H) were reviewed (inorganic and organic):

02219119	02189133
02199139	02189137
02219107	02209127
02219131	02209129
02219135	

In sample 02189133, manganese is listed in the raw data as 11400 ug/l, but the table lists 114000 ug/l. No other problems were noted. Other raw data in the February 1991 groundwater group was unavailable for review.

All Phase III soil borings shown in Appendix G were reviewed (inorganic and organic), and no problems were noted.

The following Phase III groundwater samples were reviewed (inorganic and organic):

✓04249107	✓04239131
✓04249129	✓05019135
✓04249137	✓05019157
✓04239127	✓04309115
041991CMW002	✓04309119

tan

2/27 summary

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- ✓ No problems were noted with this data. Sample 041991CMW002 is found in Appendix J; all others are in Appendix H. Raw data for other groundwater samples was not available.
- ✓ Errors noted relative to review of analytical data tables in the Phase II and earlier data have, for the most part, been adequately addressed in the final RI report. It was observed, however, that the following minor items had not been corrected in the final RI report data tables:
- Sample B-37-3: Potassium listed 265000 BDL, should be a hit.
 - Sample B-37-2: Sodium listed 321000 BDL, should be a hit.
 - Sample 122089EC: Lead should have "U" qualifier.
 - Sample MW-01 (4/27/88): TCE should be 280 ppb.
 - Sample 08179023: Lead should be 216/ug/l,
Potassium should be 1050 ug/l.
 - Sample 08179035: Methylene Chloride should be 0.9BJ ug/l,
Acetone should be 20 ug/l, and TCE should be 5 BJ ug/l

- ✓ 9. We agree with the conclusion that the Time Domain Electromagnetic (TDEM) survey does not provide the required resolution for mapping depressions in the top of the Jackson Clay where contaminants may collect. In addition, the inferred "clay pinchout" based upon TDEM does not correspond well with the "clay pinchout" based upon borehole logs illustrated on Figure 5-1. Strong correlation between the TDEM data and borehole log data is not apparent and we do not believe the elevation, relief and thickness of the Jackson Clay has been accurately determined using TDEM.

Specific

- ✓ 1. Page 30, Figure 3-1: The revised figure 3-1 has not been included with the report although the revised figure was included in the PRP response to EPA submitted 3/1/91.
- ✓ 2. Page 73, Paragraph 1: The section on external quality control does not list the Phase III "check" samples. These are: 02219107, 02219107A, 02219107B, MW57-13, 04249107, 04249107A, and 04249107B.
- ✓ 3. Page 111, Paragraph 1: The statement that the wells are "virtually dry" should be qualified. It is understood that some wells were actually dry; however, many of these wells actually contained water but recharge so slowly that groundwater samples could not be

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obtained. The logs in Appendix E and F illustrate static water levels in many of these wells (as opposed to reported as "dry").

- ✓ 4. Page 112, Figure 5-1: The text should include in the discussion of this figure an interpretation of the top of the Jackson Clay to the north. Data from MW-57 and, possibly, MW-45 may provide additional information regarding the "high". Also, a discussion on the extent of the Jackson Clay, to the west. (i.e. Schilling property wells) should be included.
- ✓ 5. Page 116: The assumed hydraulic conductivity is not stated. We assume it is the same value used in the draft RI report (134 ft/day).
- ✓ 6. Page 117, Figure 5-3: The text discussion on this figure should include a discussion on the piezometric surface to the north (MW-57) and to the west (Schilling property wells). Also, the water level is reported to be about two feet below the bottom of the screen in MW-47. Which monitoring period do the water level data represent?
- ✓ 7. Page 120, Figure 5-4: Is this Deep Aquifer potentiometric surface map supported by data from MW-58?
- ✓ 8. Page 128, Paragraph 1: For the purpose of delineating the vertical extent of soil contamination of the locations illustrated in Figures 5-7 and 5-8, is it correct to assume that contaminated soils extend to the top of the Jackson Clay?
- ✓ 9. Page 136, Table 5-4: This table should include data from Phase III including MW-57. *That is a discussion of contaminated deep wells.*
- X 10. Page 137, Paragraph 2: Reference to the new deep monitoring well, *MW 58*, (and analytical data from it) should be included.
- ✓ 11. Page 142, Paragraph 1: Based on Phase III data, it appears that the shallow aquifer flows "radially" to the north, as well.
- ✓ 12. H-53, H-54: Data for wells MW-15 and MW-19 indicate vinyl chloride but no TCE. Is that correct?
- ✓ 13. H-48: Data for wells MW-58, MW-59 and MW-61 have not been presented.
- ✓ 14. G-7: Sample MW57-13 should be designated as a "check" sample.

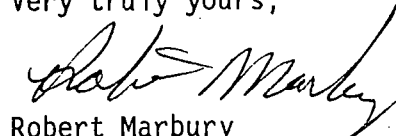
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- ✓ 15. Appendix F, MW-49: The log for MW-49 indicates the Jackson Clay was encountered, but the Top of Jackson Clay map indicates the clay is "absent" at MW-49. Please clarify.
- ✓ 16. H-44: What is the explanation for TCE BDL in sample 04309119 when, historically, TCE concentrations have been relatively high?

These comments conclude our review of the revised RI report. We recommend that comments presented herein be addressed, especially those that pertain to Phase III data. If you have any questions or comments, do not hesitate to contact me at 392-9227.

Very truly yours,



Robert Marbury
Project Manager

jv
Enclosure

cc: Jane Penny